70. GLUCOCORTICOID EFFECTS IN THE HUMAN HEMATOPOIETIC CELL LINE CM-S

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CM-S is an established diploid-euploid line of human precursor hematopoietic cells. We have investigated the dexamethasone (DEX) responsiveness of CM-S cells.Untreated CM-S express an average of $6x10^4$ single class high affinity ($Kd=2.9x10^{-9}$ M) DEX-specific receptor sites per cell, as measured by a whole cell assay, at 37°C, using ^{3}H-Triaminolone acetamide as tracer. The steroid induces a rapid series of changes in CM-S cell growth, saturation density,morphology, antigenic and functional properties, in a time and dose dependent fashion. After 5 days in culture with a saturating concentration ($3.6x10^{-8}$ M) of DEX, the volume of the resulting cell population decreases approximately 40%, as compared to the volume of the untreated controls, while the cells reach a saturation density of about $9x10^6$ viable cells/ml, as compared to $4x10^6$ viable cells/ml in the controls.DEX-treated CM-S cells show morphologic and several cytochemical ,antigenic and functional properties characteristic of monocyte-macrophages and primitive erythroid cells.CM-S cell differentiation is accompanied by a significant decrease of DEX-specific receptor sites(about 40%,Kd $=5.2x10^{-9}$ M).Such a decrease of DEX-specific receptor sites is not explained by the masking of the endogenous steroid because comparable results were obtained with CM-S cells induced to differentiation along the monocyte and erythroid pathways by a series of different,unrelated chemical inducing agents(e.g.some tumor promoting phorbol esters,hemin, media conditioned from lectin-stimulated human peripheral blood leukocytes,etc.).These studies suggest that:1.CM-S cells have receptors that mediate proliferation-differentiation promoting signals triggered by DEX; 2.the expression of the glucocorticoid receptors apparently changes,depending upon the stage of cell maturation and differentiation.

71. SEROTONINERGIC SYSTEM AND THE DISSOCIATION OF FSH AND LH SECRETION IN NEONATALLY ESTROGENIZED MALE RATS. E.Aguilar;L.Pinilla;F.López;M.D.Collado;C.Fdez-Galaz. Depts. of Physiology. Faculties of Medicine of Córdoba and Madrid (Comp.). SPAIN.

To analyze the participation of serotoninergic system in LH and FSH response to castration and the neonatal differentiation of this system, control (C) and neonatally estrogenized (E) male rats were used. In the adult age both hormones were measured by RIA before and fifteen days after castration. On the day of castration, after blood sampling the animals were injected with 5-7 DHT(150 ugr. I.V.) or "sham operated". The results shows: 1.- Basal FSH levels in C and E groups were similar (347 vs 350 ngr./ml.). Basal LH levels were reduced in E animals (20.4 vs 48.8 ngr./ml.). 2.- LH response to castration was reduced in E animals (150 vs 449 ngr./ml.), while FSH response was the same in C and E animals (1328 vs 1211 ngr./ml.). 3.- Destruction of the serotoninergic system with 5-7 DHT reduces the LH response to castration in C and E animals (264 vs 449 and 35 vs 150 ngr./ml. respectively). 4.- Destruction of serotoninergic system reduces the FSH response to castration only in estrogenized animals (837 vs 1211 ngr./ml.).
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72. ESTROGEN-DEPENDENT DIFFERENTIATION OF THE VENTROMEDIAL NUCLEUS (VMN) IN THE RAT HYPOTHALAMUS.

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Administration of estradiol benzoate (EB) to adult ovariectomized rats induces ultrastructural changes in VMN neurons indicative of metabolic stimulation accompanied by increased number of terminal and synaptic contacts (Carrer & Aoki, Brain Res. 1982). Stereological and electron microscopical procedures were used to study changes brought about by pre-puberal (aged 10 days) ovariectomy (OV). We found that OV interferes with differentiation of the VMN as evidenced by failure to establish the known boundaries between different VMN subdivisions and the absence of the acellular shell which normally separates the VMN from surrounding structures. This failure in the clustering of the VMN does not prevent the behavioral or cytological responses to EB administration when adult. Acute administration of EB causes striking transformations in VMN neurons comparable to those observed in adult OV rats, although no reaggregation of neurons was seen. These results offer evidence of the high degree of structural and physiological plasticity of VMN neurons, although apparently, conformation of the normal nuclear organization is not necessary for estrogen to exert its effects on sexual behavior.